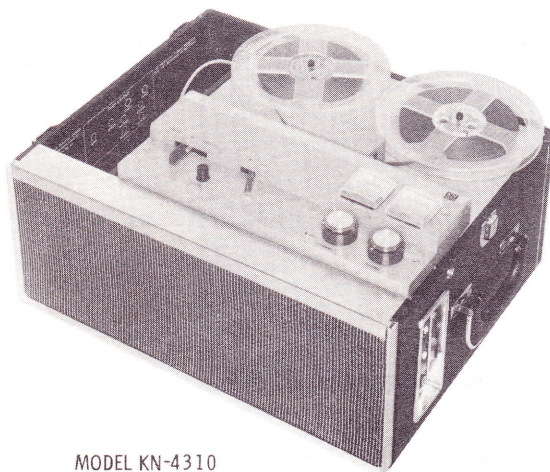
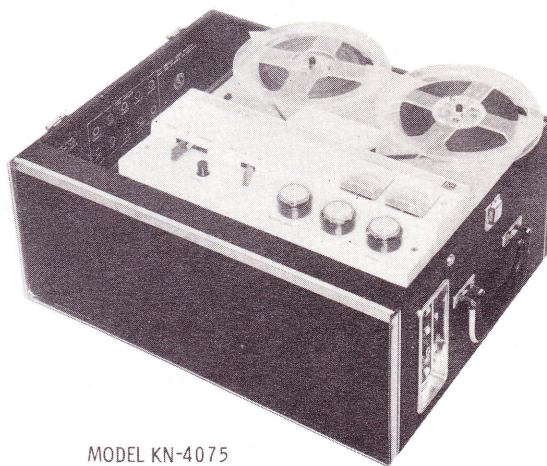
KNIGHT MODELS KN-4075
(35DU713), KN-4310 (35DU807)

MODEL KN-4310



MODEL KN-4075

KNIGHT MODELS KN-4075
(35DU713), KN-4310 (35DU807)

GENERAL INFORMATION

The Knight Models KN-4075 and KN-4310 are three-speed, stereophonic tape recorders. These units play back 2- and 4-track stereo and monaural recordings and record 4-track stereo or monaural material. The major differences in these recorders are in the amplifiers.

Recordings can be made from a microphone, radio, phonograph, tuner, or TV set. Speaker jacks are provided for connecting external speakers.

Model KN-4310 is a complete record and playback unit. Model KN-4075 contains preamps for recording, however, external amplifiers and speaker systems are necessary to play back prerecorded material.

These units operate at $7\frac{1}{2}$, $3\frac{3}{4}$, and $1\frac{7}{8}$ ips. A two-position equalization switch for $7\frac{1}{2}$, $3\frac{3}{4}$ and $1\frac{7}{8}$ ips is provided.

These recorders operate on 115-120 volt, 60 cycle AC only.

Supplied By:

Allied Radio
100 North Western Avenue
Chicago 80, Illinois

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of CQ530

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1962 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America



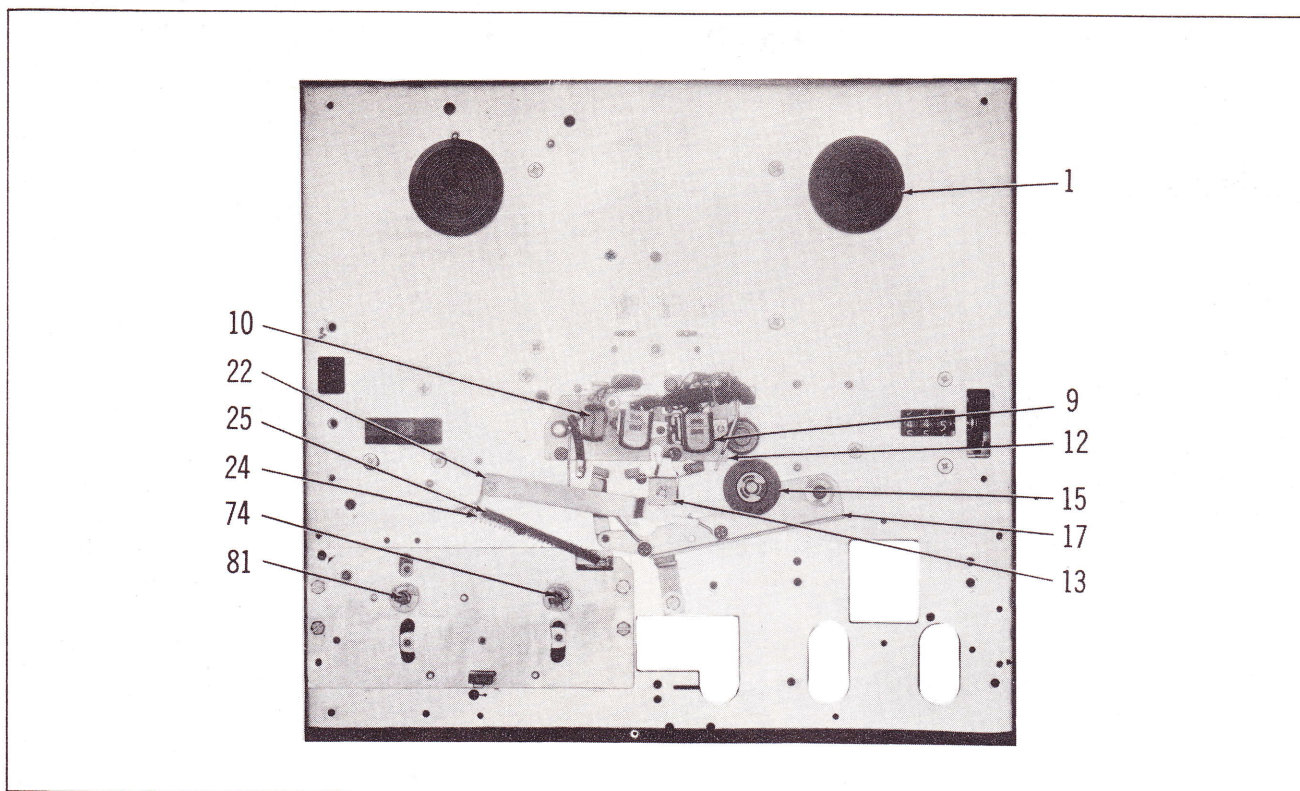


FIG. 1 TOP VIEW OF MECHANISM WITH TOP COVERS REMOVED

FUNCTION OF CONTROLS

Play-Stop

Starts the transport in motion to play back or record. When returned to Stop position, stops the tape movement.

Rewind-Forward

Moves the tape at a fast rate to either the supply reel or take-up reel.

Record Interlock

Must be pressed down to place the recorder in the record mode. Prevents accidental erasure of prerecorded material. Holding down on the Record Interlock prevents tape movement. Hold the Record Interlock down while setting record levels.

Volume

Model KN-4310 has a volume control for each channel. This control adjusts the volume during playback of tape and adjusts the record level when recording. Channel 1 Volume control also turns power on or off on both models. Model KN-4075 has a volume control for each channel which adjusts playback volume only.

Record Level (Model KN-4075 only)

Adjusts the record level when making a recording.

Channel Selector

Selects channel 1 or channel 2 for monaural recordings or both channels for stereophonic recordings.

Tone (Model KN-4310 only)

Adjusts the tone during playback only.

Head Elevator (Model KN-4075 only)

Moves the Record-Playback head to the 1/4 or 1/2 track position.

Index Counter

Provides a reference to the beginning of selections on a reel of tape.

Speed Selector

Selects the speed at which tapes are recorded, 1 7/8, 3 3/4, and 7 1/2 ips. Change speed while unit is operating only.

Equalization Switch

Provides proper equalization for the speeds used to record and play back material.

Record Level Indicators

Show correct recording level for each channel when recording.

Speaker Switch (Model KN-4310 only)

Turns both channel speakers on or off.

Normal-Sound on Sound Switch (Model KN-4075 only)

Used to add material on one track with material being recorded on the other track.

INPUT AND OUTPUT JACKS

Output 1 and Output 2 (Model KN-4075 only)

External amplifiers which are necessary to play back prerecorded tape are connected to these jacks.

High Level Input 1 and High Level Input 2 (Model KN-4075 only)

Used to connect a TV set, tuner, phono, or other high level source to the unit for recording.

Mic 1 and Mic 2 (Models KN-4075 and KN-4310)

Used to connect the microphones to the unit for recording.

Radio-Phono 1 and Radio-Phono 2 (Model KN-4310 only)

Same as the High Level Inputs on Model KN-4075.

Magnetic Input 1 and Magnetic Input (Model KN-4075 only)

Used to connect a phono with a magnetic cartridge to the unit.

External Speaker 1 and External Speaker 2 (Model KN-4310 only)

External speakers can be connected to the unit by inserting the speaker plugs into these jacks. When external speakers are connected to these jacks, the speakers in the unit are disconnected.

OPERATING INSTRUCTIONS

Threading the Tape

1. Place a full reel of tape on the supply spindle and an empty reel of the same size on the take-up spindle.
2. Unwind about 18 inches of tape and thread it through the head slot making sure the shiny side of the tape is facing the front of the recorder.
3. Insert the end of the tape into one of the radial slots of the reel. Rotate the reel several times to secure the tape and take up any slack.

To Make a Monaural Recording

1. Thread the tape as described under "Threading the Tape".
2. Insert the plug from the microphone or other program source to be used into the proper input jack.
3. On Model KN-4075, press down on the Head Elevator tab marked 1/4 Track.
4. Turn the power on and allow sufficient time for tubes to warm up.
5. Select the speed to be used by rotating the Speed Selector to the desired speed.
6. Set the Equalization switch to correspond to the speed being used; 1 7/8, 3 3/4, or 7 1/2 ips.
7. Turn the Channel Selector switch to the Channel 1 position.
8. To set the record level before beginning the actual recording, press and hold down the Record Interlock button and adjust for the correct recording level.
9. To begin the recording, hold the Record Interlock down and at the same time, rotate the Play-Stop control to the Play position.

10. When the recording is finished, rotate the Play-Stop control to the Stop position.

4-Track Monaural Recording

Use the same procedure as described under "To Make a Monaural Recording". After track 1 is completely recorded, do not rewind the tape. Turn the reels over and rethread the tape. Leave the Channel Selector in the Channel 1 position. The material will now be recorded on track 3. When track 3 is completed, turn the tape over. Move the Channel Selector switch to Channel 2 and continue recording on track 2 to the end of the tape. Leave the Channel Selector in the Channel 2 position and turn the tape over. Now the material will be recorded on track 4.

To Play Back 2-Track Stereophonic Tape (Model KN-4075)

1. Thread the tape as described under "Threading the Tape".
2. Push down on the Head Elevator tab marked 1/2 Track.
3. Move the Play-Stop control to the Play position. On Model KN-4310, switch the speakers on by moving the Speaker switch to the On position.
4. Adjust the Volume controls to the desired listening level.
5. To stop the tape, move the Play-Stop control to the stop position. At the end of the tape, the transport will shut off automatically.

To Wind or Rewind the Tape

Move the Rewind-Forward control to the direction desired. To stop the tape, move the Rewind-Forward control to the center position.

To Make 4-Track Stereophonic Recordings

1. Thread the tape as described under "Threading the Tape".

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2. Plug the cables from the sound source into the proper input jacks; Channel 1 and Channel 2 input.
3. Place the Record-Playback head to the 4-track position by pushing the Head Elevator tab marked 1/4 Track down.
4. Preset the recording levels by pushing down on the Record Interlock button and holding it down while setting the record level for each channel.
5. To begin the recording, hold the Record Interlock button down and at the same time, move the Play-Stop control to the Play position.
6. When side 1 is completed, turn the tape over and record side 2.

To Use the Index Counter

When making a recording, set the index counter to "000" position when the tape is threaded on the transport. At the end of each selection, note the reading of the index counter. This makes it possible to find desired selections when played back.

To Erase the Tape

If it is desirable to erase the tape without reading new material on the tape, follow the normal recording procedure, however, disconnect the inputs and turn the Record Level controls (Model KN-4075) or Volume controls (Model KN-4310) to the maximum counterclockwise position.

DISASSEMBLY

1. Place the unit on a level surface and remove the lid.
2. Remove the push-on type knobs.
3. Remove the screws securing front and rear escutcheons and pull up on escutcheons. Remove Record Level indicator plugs on Model KN-4075. Unsolder Record Level indicator leads on Model KN-4310.
4. Remove screws from head cover (5) and remove cover.
5. Remove screws securing dress plate (7) and

remove dress plate.

6. Remove screws holding input panel plate and remove plate.
7. Remove screws from sides, back, and bottom holding transport in the case.
8. Pull transport up and out of the carrying case. On Model KN-4310 unplug speaker leads.
9. To reassemble the unit, reverse the foregoing procedure.

ADJUSTMENTS

To Align Record-Playback Head (Model KN-4075)

1. Place the head in the up position by pushing the left tab of the Head Elevator down.
2. Connect an AC VTVM across the left channel output.
3. Thread a 4-Track prerecorded alignment tape on the transport and move the Play-Stop control to the Play position.
4. Loosen the side mounting screws and raise or lower the head until the top edge of the tape is even with the top edge of the upper pole piece.
5. Adjust the azimuth adjusting screw for maximum output as read on the AC VTVM.

To Align Record-Playback Head (Model KN-4310)

The Record-Playback head on the KN-4310 is permanently mounted in the 1/4 track position. The same procedure may be used for the KN-4075.

To Align Erase Head

Loosen mounting nuts and set the Erase Head (10) so that the top edge of the upper pole piece is even with the top edge of the recording tape.

Brake Adjustment

1. Check to see that the Brake Arm (49) is perfectly parallel with respect to the Speed Selector mounting bracket.
2. To adjust the brake arm (49), loosen either the right- or left-hand screw holding the brake cord to the motor mounting bracket. Taking up slack or releasing tension on brake cord moves the brake arm into the proper position.

NOTE: If brake tension is adjusted, the Automatic Stop switch adjustment must be checked.

Pressure Roller Tension Adjustment

1. With no power applied, move the Play-Stop control to the Play position.
2. Using a pull scale connected to the pressure roller, determine the amount of pressure required to pull the pressure roller away from the capstan shaft. Pressure should be from 22 to 24 ounces.
3. Adjust the pressure roller pressure by bending the tab on the Play Lever and Cam assembly (36) until the correct pressure is obtained.

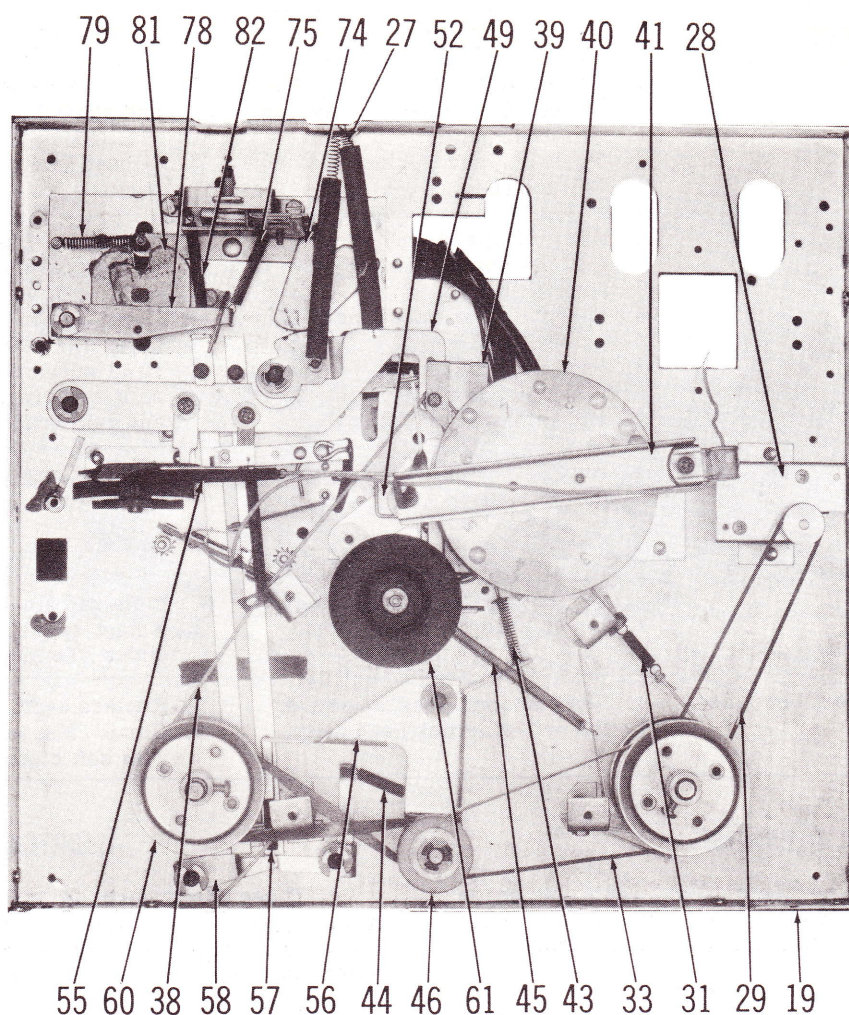


FIG. 2 BOTTOM VIEW OF MECHANISM

TROUBLE CHART

SYMPTOM	CAUSE	REMEDY
Tape fails to move in Play or Record mode.	1. Worn or dirty pressure roller (15).	1. Clean or replace pressure roller (15).
	2. Supply spindle binding.	2. Clean supply spindle shaft or loosen brake cord.
	3. Insufficient pressure roller tension.	3. Increase tension as described under "Pressure Roller Tension Adjustment."
	4. Idler wheel spring (45) weak or disconnected.	4. Replace or connect idler wheel tension spring (45).
	5. Shafts of idler arm pivot (53) dirty or bent.	5. Clean shafts or straighten plate.
Tape fails to move when in Forward or Rewind mode.	1. Idler drive belt (62) broken or worn.	1. Replace idler drive belt (62).
	2. Brake cord (38) too tight.	2. Adjust brakes as described under "Brake Adjustment."
	3. Forward or rewind belt (33) broken or too tight.	3. Replace forward or rewind belt (33). Idler pulley arm (56) should have $1/16"$ \pm $1/32"$ travel from left to right in Stop position.
	4. Idler pulley assembly (56) binding.	4. Remove idler pulley (46); clean shaft. Oil and replace pulley.
Variation in tape speed.	1. Pressure roller (15) too tight against capstan.	1. Adjust as described under "Pressure Roller Tension Adjustment."

TROUBLE CHART (CONT'D.)

SYMPTOM	CAUSE	REMEDY
No Speed change.	2. Oil or dirt on capstan, idler wheel (61), idler pulley (46), or motor pulley.	2. Clean these parts with a soft cloth and alcohol.
	3. Pressure pad springs (24) and (25) too tight.	3. Loosen springs by bending anchor back.
	1. Arm of speed change bracket (52) has jumped out of groove of idler arm (56).	1. Reposition arm in groove. Straighten speed change bracket (52).
Automatic stop does not function.	2. Speed sliding post gummed up or corroded.	2. Clean or replace sliding post and apply a thin coat of oil.
	3. Support bracket of idler arm (52) jumped to left of play lever and cam bracket (36).	3. Bend support bracket (52) down so it will clear top of play lever and cam bracket (36).
Incomplete erasure.	1. Automatic stop switch lever bent out of position.	1. Adjust lever so switch actuates when lever passes line of tape travel.
	1. Erase head (10) dirty.	1. Clean erase head (10) with soft cloth and alcohol.
	2. Erase head out of position.	2. Adjust erase head as described under "To Align Erase Head."
Recordings weak or distorted.	1. Worn Record-Playback head.	1. Replace head.
	2. Record-Playback head dirty.	2. Clean Record-Playback head with soft cloth and alcohol.

CLEANING

Pressure roller (15), capstan, recording heads, and erasehead should be cleaned occasionally of dirt and foreign matter with a soft cloth and alcohol.

LUBRICATION

These recorders do not require lubrication under normal use. When disassembled for repair, wipe all bearings and slide levers with a clean soft cloth and apply a thin coat of oil on the surfaces.

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	TS-2152	Spindle, Reel	21	TB-2073	Bracket, Record-Playback Head Pressure Pad (Model KN-4075)
2	TK-289	Knob, Top Section		TB-2130	Bracket, Record-Playback Head Pressure Pad (Model KN-4310)
3	TK-290	Knob, Lower Section	22	TB-2073	Bracket, Record-Playback Pressure (Model KN-4075)
4		Knob, Channel Selector	23	TB-2076	Bracket, Erase Head Pressure Pad (Model KN-4075)
5	TE-317	Cover, Head (Model KN-4075)		TB-2137	Bracket, Erase Head Pressure Pad (Model KN-4310)
6	TE-317-1	Cover, Head (Model KN-4310)	24	TS-1755	Spring, Record-Playback Head Pressure Pad Tension
7	TP-1518	Dress Plate (Model KN-4075)	25	TS-1993	Spring, Erase Head Pressure Pad Tension
8	960108-1	Dress Plate (Model KN-4310)	26		Spring, Head Azimuth Adjustment
9	TA-1992	Front Escutcheon (Model KN-4075)	27	TS-2245	Spring, Cam Lever and Brake Arm
10	TA-1989	Front Escutcheon (Model KN-4310)	28	TC-1747	Counter, Tape
11	TH-584	Record-Playback Head	29	TR-1614	Belt, Tape Counter Drive
12	TH-590	Erase Head	30	TA-1183	Counter and Brake Pulley
13	TG-527	Post, Tape Guide	31	TS-2085	Spring, Brake Cord
14	TP-1500	Plate, Head Mounting	32	TA-265	Spindle, Pulley
15	TB-2073	Bracket, Record-Playback Pressure Pad (Model KN-4075)	33	TB-1018-5	Belt, Rewind and Forward
16	TB-2130	Bracket, Record-Playback Pressure Pad (Model KN-4310)	34	TS-2086	Shaft, Record-Playback Head Lifter Swivel
17	TR-1846	Ring, Retaining	35	TS-2244	Spring, Pressure Roller Tension
18	TW-464	Roller, Pressure	36	TA-1176-1	Lever, Play and Cam Assembly
19		Wire Form, Record-Playback Pad Release			
20	TA-1488-1	Plate Pressure Roller Assembly			
	TB-1067-1	Bracket, Pressure Roller Plate Stop			
		Motor Board			
	TK-288	Knob, Rewind and Forward			

MECHANICAL PARTS LIST (CONT'D.)

Ref. No.	Part No.	Description
37		Swivel, Record-Playback Lifter (Model KN-4075)
38	TB-1093	Cord, Brake, 24" Long
39	TB-1050	Bracket, Brake Cord Retainer
40	TA-1744	Flywheel and Capstan Assembly
41	TA-1252	Plate, Flywheel Thrust
42	TA-1225	Idler Release Rod
43	TS-2041	Spring, Compression, Take-up
44	TS-3576	Spring, Forward
45	TS-1993	Spring, Idler Wheel
46	TA-1489	Idler Pulley Assembly
47	TA-1743	Rod, Push
48	TA-1170-2	Automatic Shut-off Bracket Ass'y.
49	TA-1173-1	Lever, Brake Release
50	TA-1169	Actuator, Automatic Shut-off
51	TP-1008	Plate, Speed Selector Locking
52	TA-1172	Arm, Speed Change Support
53	TA-1174-1	Idler Arm Pivot Assembly
54	TB-1012	Bracket, Speed Selector
55	TS-1980	Spring, Speed Selector
56	TA-1163	Arm, Idler Pulley Assembly
57	TS-1981	Spring, Rewind
58	TL-367	Link, Rewind Spring
59	TA-1164	Pulley, Brake
60	TA-265	Pulley, Rewind
61*	TW-424*	Wheel, Idler *

* Wheel, Idler, WALSCO Part #1475

Ref. No.	Part No.	Description
62*	TR-1548*	Belt, Idler Drive *
63	TP-1003	Plate, Motor Mounting
64	TM-415	Grommet, Shock Mount
65	TS-1963	Spacer, Motor Mounting
66		Washer
67	TA-1993	Drive Motor with Pulley (Model KN-4075)
	TA-1990	Drive Motor with Pulley (Model KN-4310)
68		Washer
69	TF-342	Fan, Drive Motor (Model KN-4075)
	TF-347-2	Fan, Drive Motor (Model KN-4310)
70		Plate, Control
71		Button, Record
72		Bracket, Record Lock
73	TL-387-1	Lever, Switch
74	TA-1691	Cam, Play, with Shaft
75	TS-3515	Spring, Forward Lever
76	TS-3516	Spring, Record Lever
77		Stop, Forward Lever
78	TA-1734	Lever, Forward Push
79	TS-3514	Spring, Interlock Lever
80	TA-1768	Lever, Rewind Push
81	TA-1729	Cam, Rewind-Forward with Shaft
82	TS-3515	Spring, Rewind Lever

* Belt, Idler Drive, WALSCO Part #1410-06

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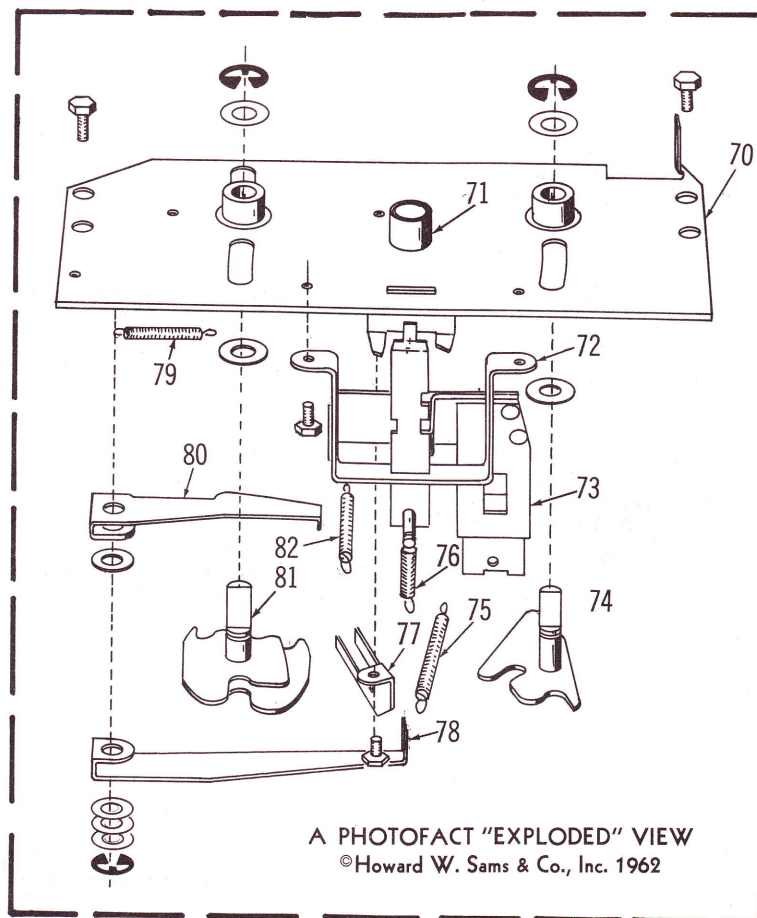
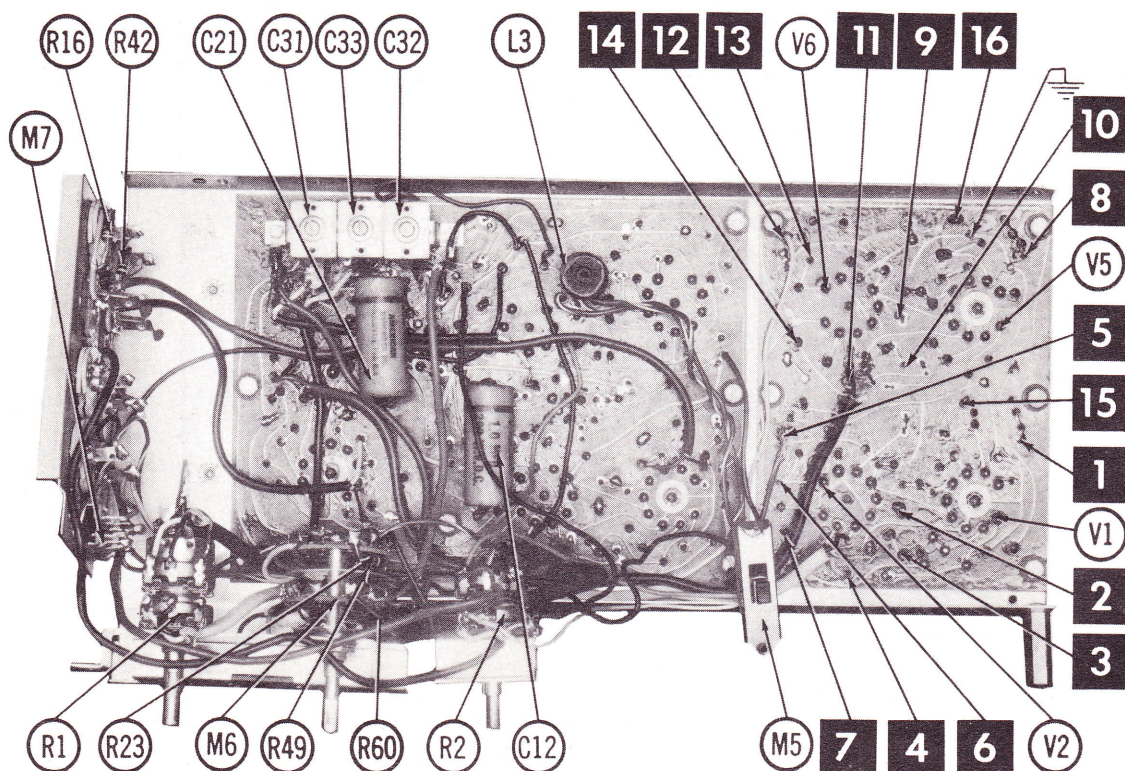
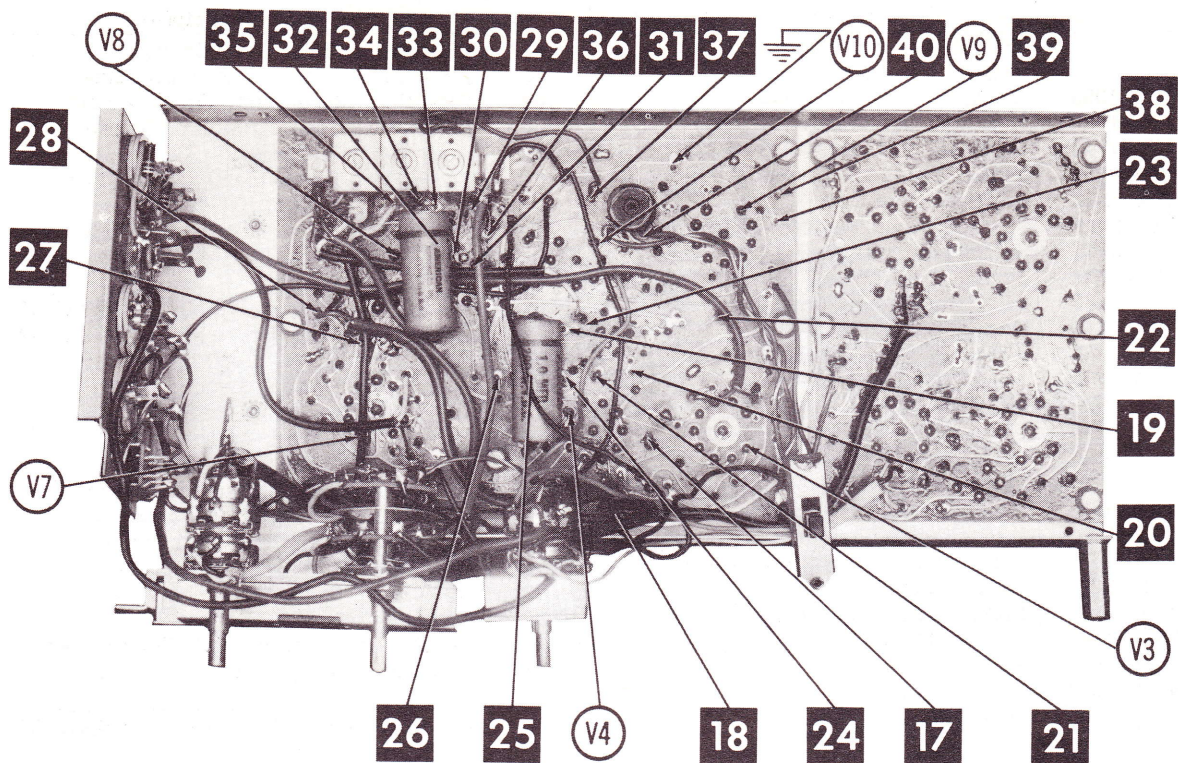


FIG. 3A EXPLODED VIEW OF FUNCTION CONTROL MECHANISM

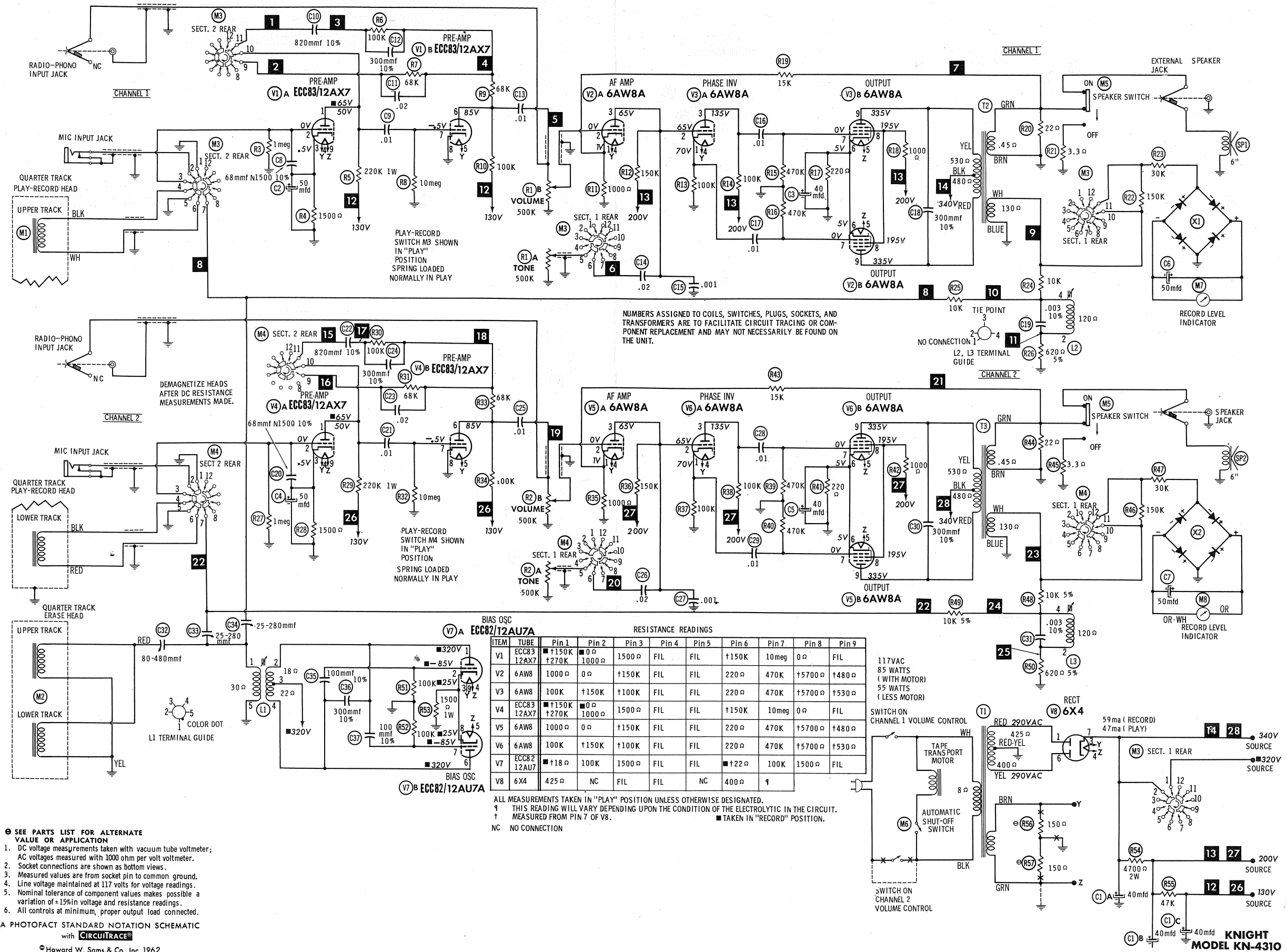


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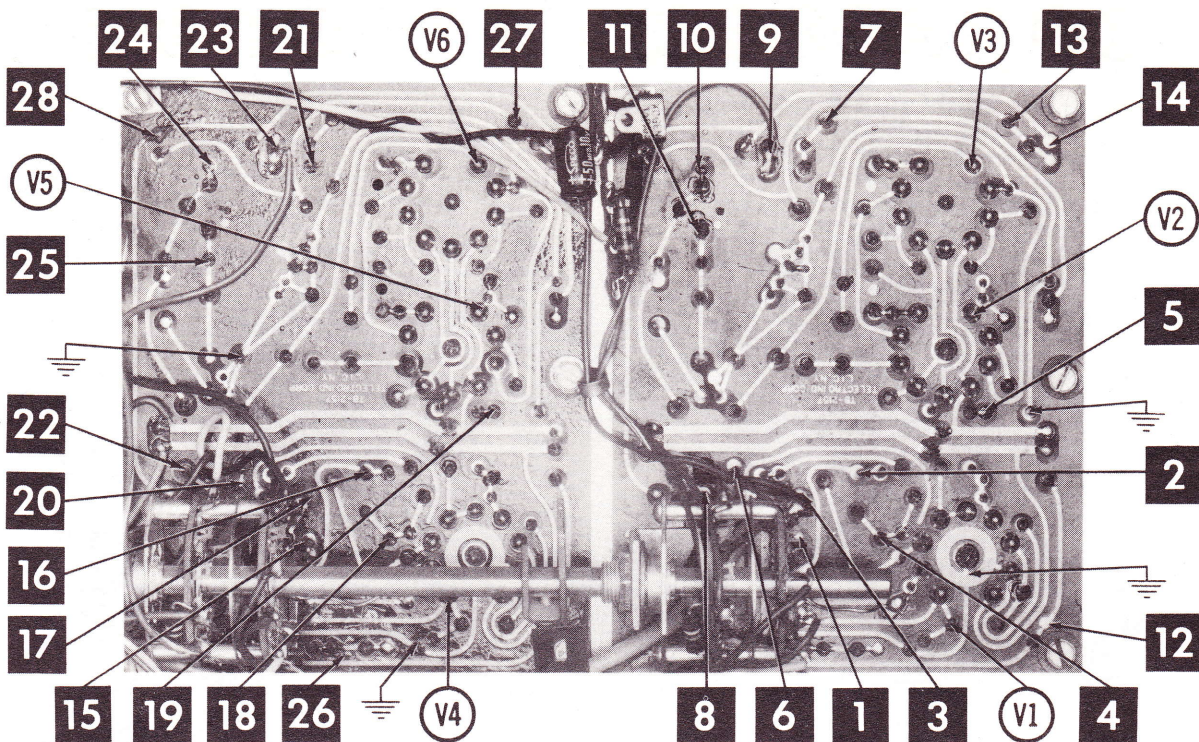
MODEL KN-4075 CHASSIS BOTTOM VIEW

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

MODEL KN-4075 SCHEMATIC



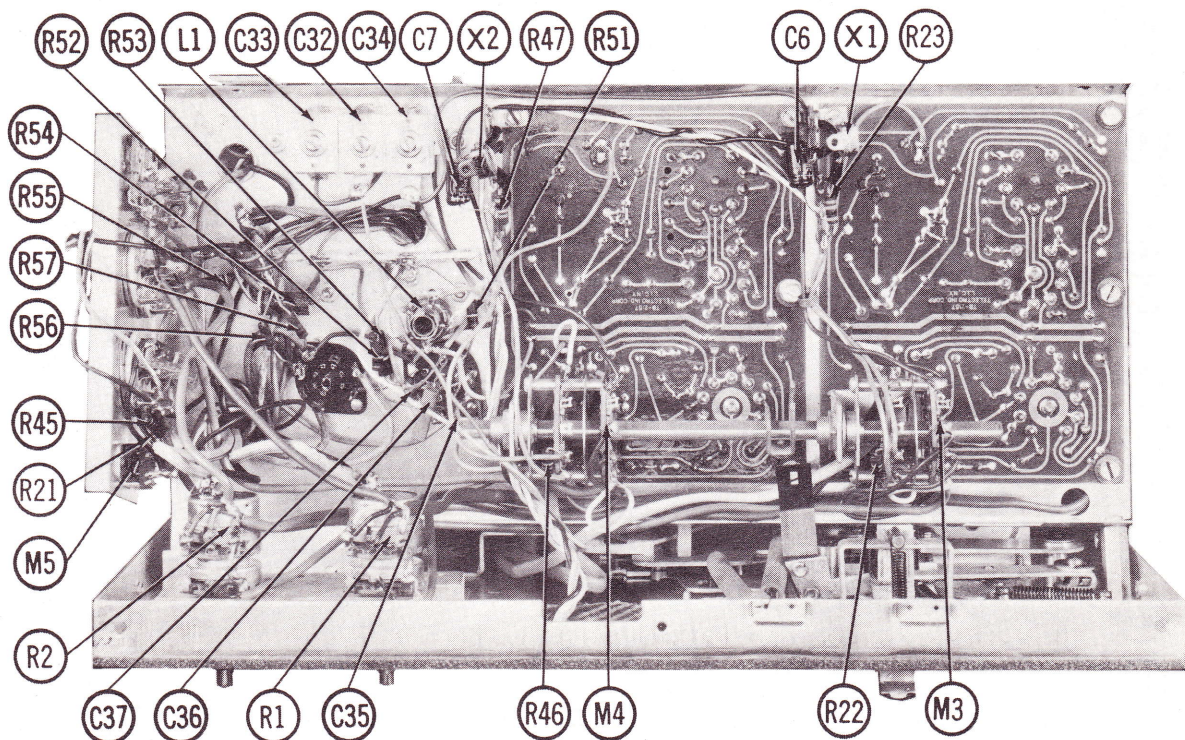
MODEL KN-4310 SCHEMATIC



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MODEL KN-4310 PRINTED BOARD

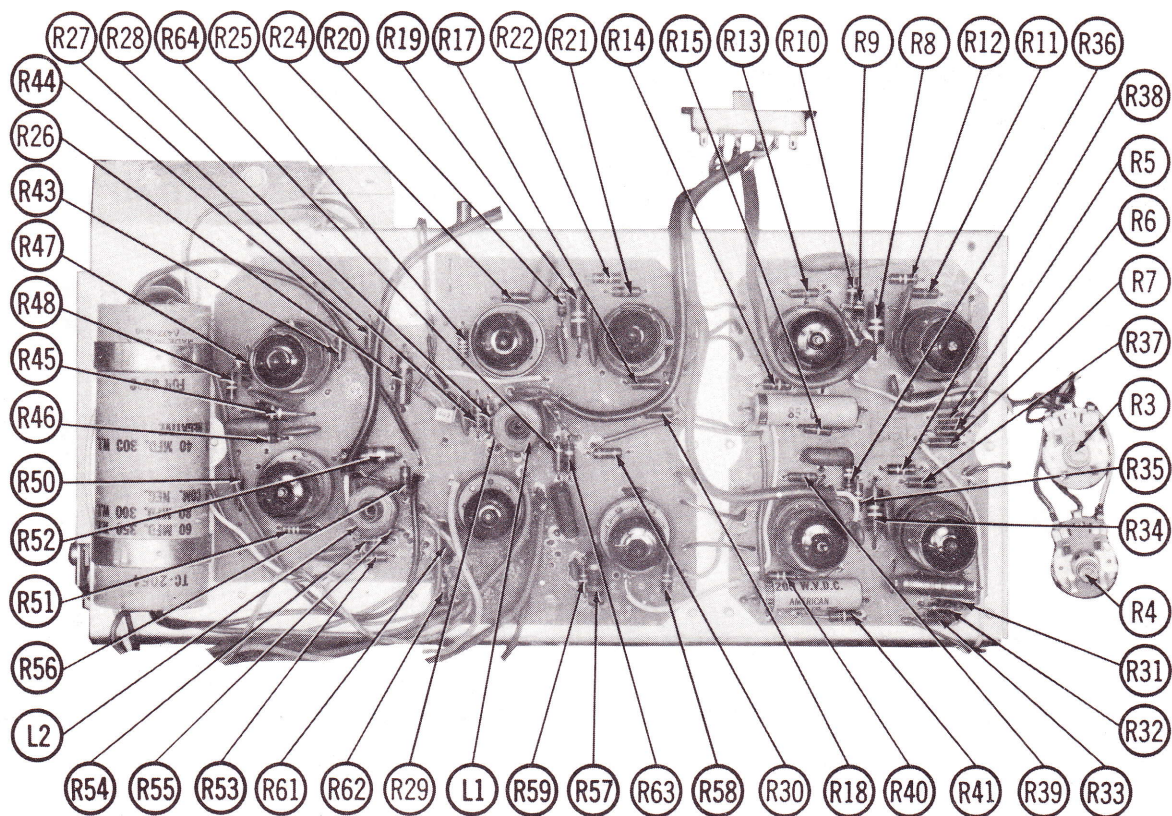
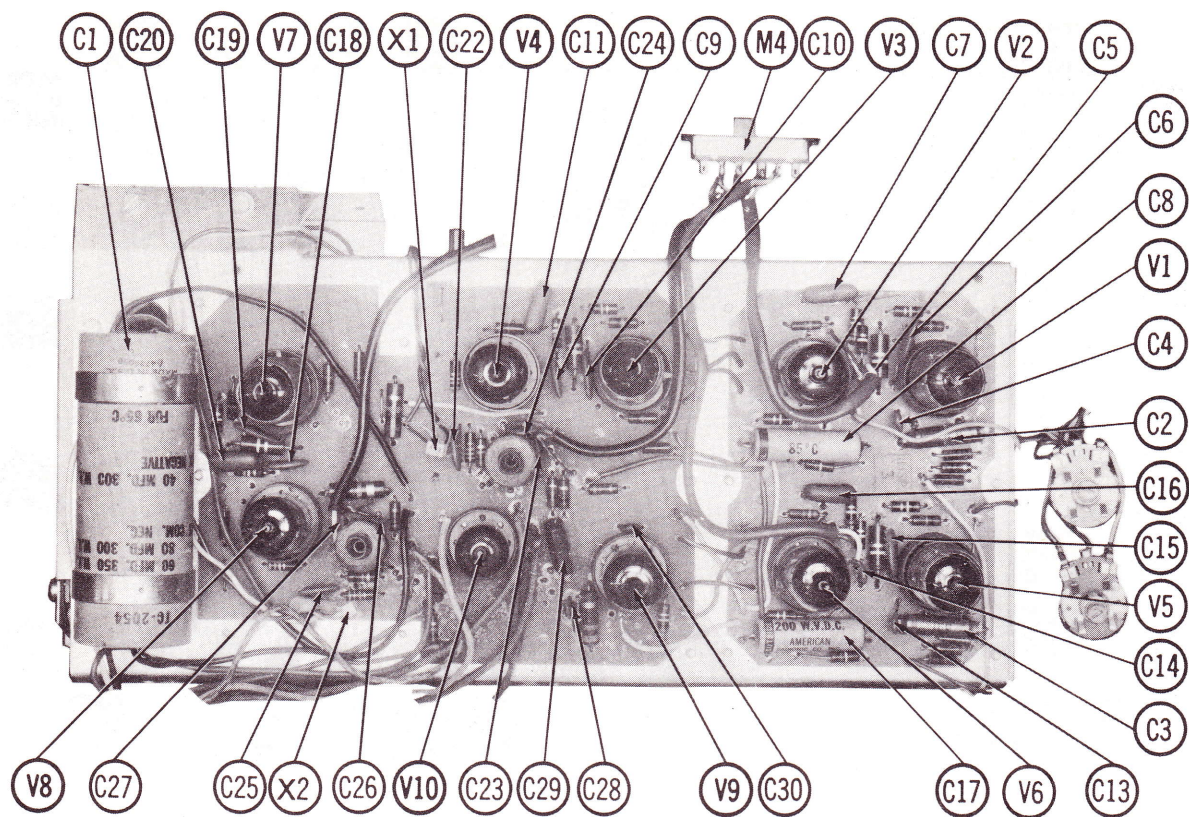
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



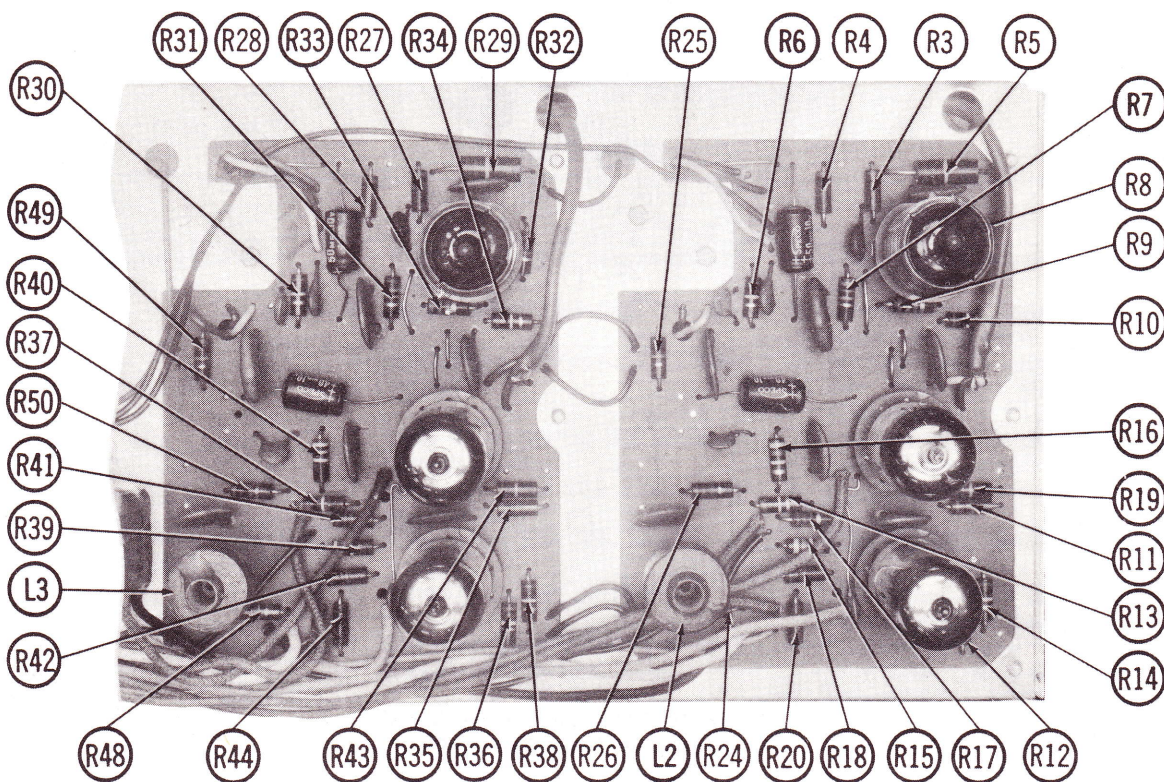
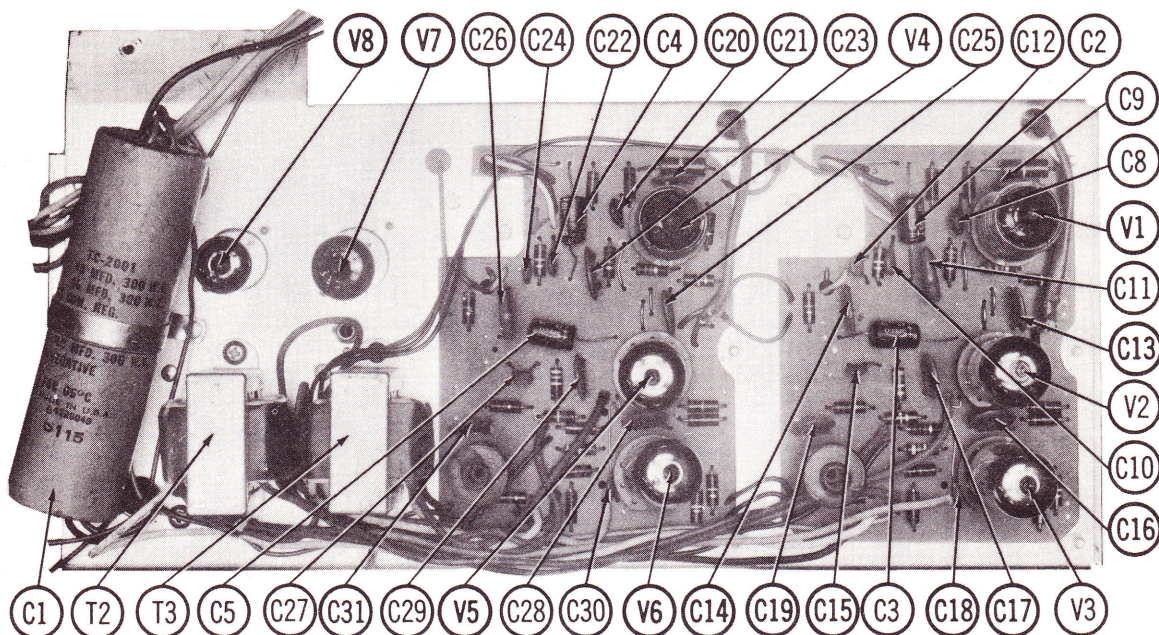
MODEL KN-4310 CHASSIS - BOTTOM VIEW

KNIGHT MODELS KN-4075
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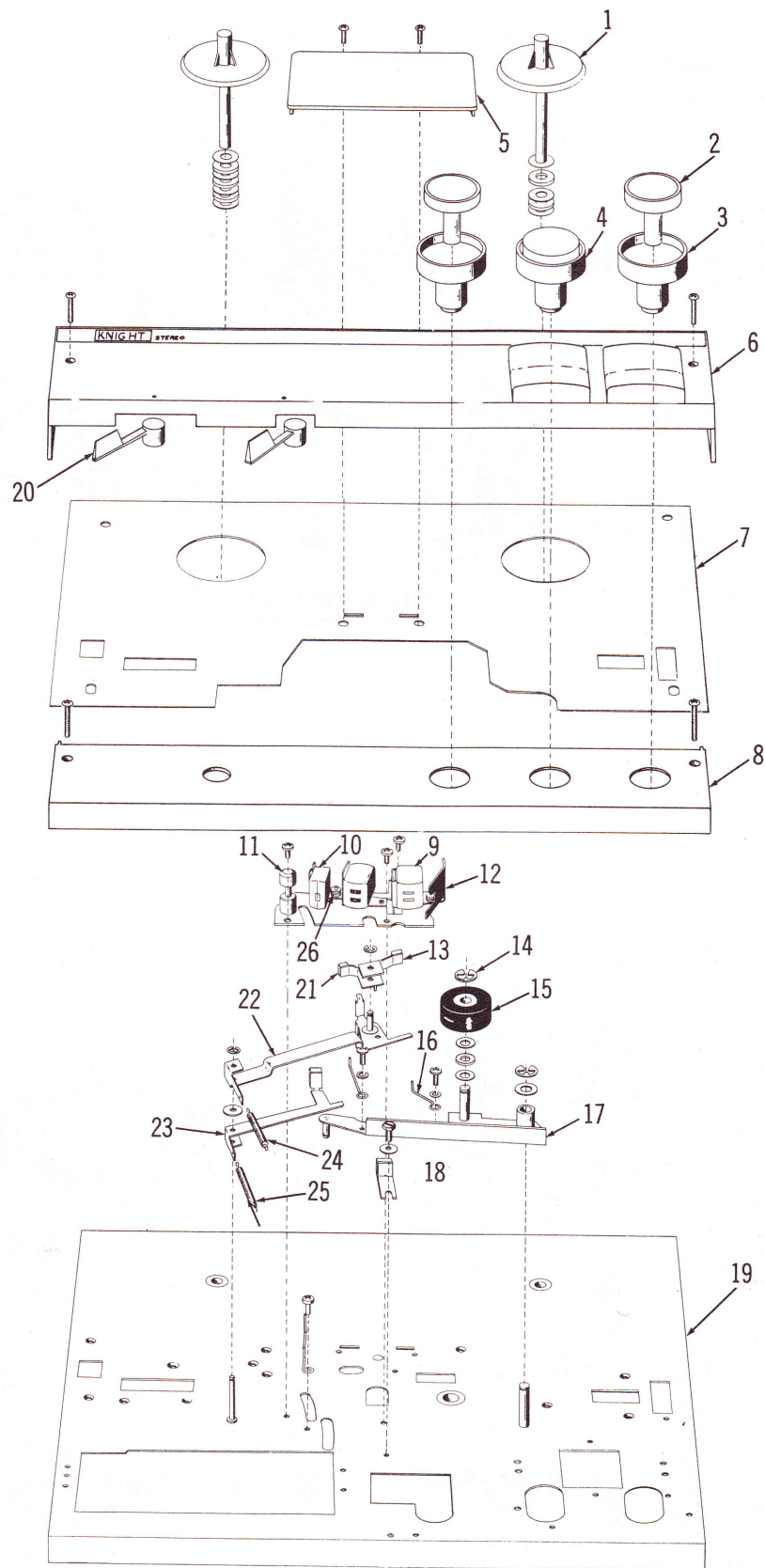
MODEL KN-4075 CHASSIS TOP VIEW



MODEL KN-4310 CHASSIS - TOP VIEW

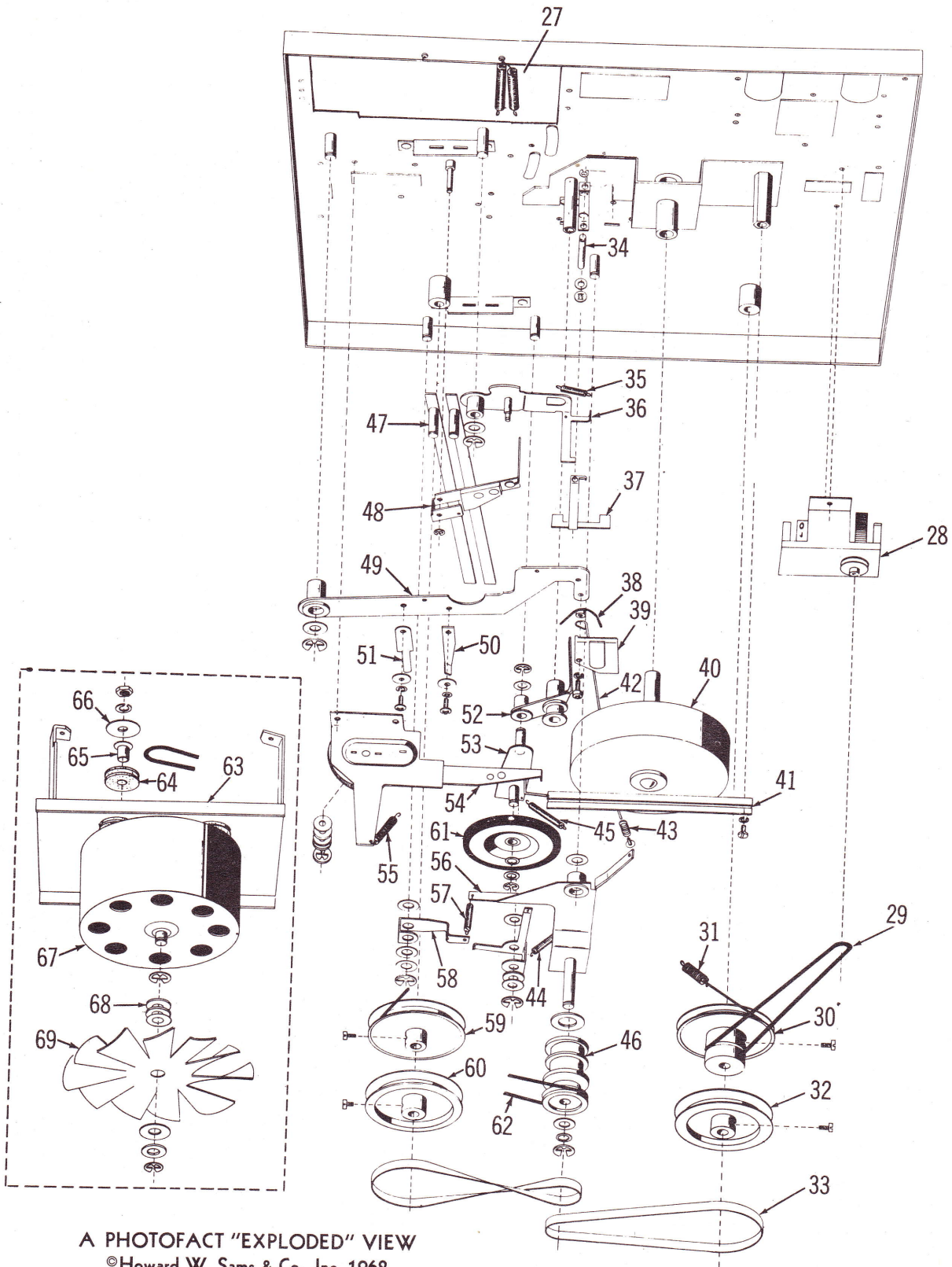
KNIGHT MODELS KN-4075
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A PHOTOFACT "EXPLODED" VIEW
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FIG. 3 B EXPLODED VIEW OF PARTS ABOVE MOTOR BOARD



A PHOTOFACT "EXPLODED" VIEW
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FIG. 3C EXPLODED VIEW OF PARTS BELOW MOTOR BOARD

MODEL KN-4075

AMP PARTS LIST AND DESCRIPTIONS

MODEL KN-4075

TUBES

AMPEREX			GENERAL ELECTRIC			RCA			RAYTHEON			SYLVANIA		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Channel 1 Play Amp.	ECC83/12AX7	V6	Channel 2 Play Amp. - Cathode Follower	12AU7									
V2	Channel 1 Play Amp. - Cathode Follower	12AU7	V7	Channel 2 Record Preamp.	ECC83/12AX7									
V3	Channel 1 Record Preamp.	ECC83/12AX7	V8	Channel 2 Record Amp. - Cathode Follower	12AU7									
V4	Channel 1 Record AF Amp.	7247	V9	Bias Oscillator	ECC82/12AU7A									
V5	Channel 2 Play Amp.	ECC83/12AX7	V10	Rectifier	EZ90/6X4									

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	ORIGINAL Part or Type No.	RECTIFIERS		DIODES		NOTES
			RCA PART No.	SARKS TARZIAN PART No.			
X1		TR2381					Channel 1 Record Meter Rectifier
X2		TR2381					Channel 2 Record Meter Rectifier

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	KNIGHT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C1A	80	350	TC-2054	PR4-450	BBRQ0789.5	QT4-3	WT458 TC65	MLV100-3	TE-1059.5
B	80	300							
C	40	300							
C2	100	3							
C3	100	3		PTT13	NLW100-3	MT1-18	TT3X110	MLV100-3	TE-1059.5

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	200 10%		DI-200	DD-201	LI0T2	CCD-201	GP320	10TS-T20
C5	820 10%		DI-820	DD-821	5R5T82	CCD-821	GP382	10TS-T82
C6	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C7	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S50
C8	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C9	.002 10%		DI-2000		5R5D2	CCD-202	GP220	10TS-D20
C10	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C11	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S50
C12	1.0 200V		P288N-1.0		CUB2W1	GEM-21	GEM-21	2TM-M1
C13	200 10%		DI-200	DD-201	LI0T2	CCD-201	GP320	10TS-T20
C14	820 10%		DI-820	DD-821	5R5T82	CCD-821	GP382	10TS-T82
C15	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C16	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S50
C17	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C18	.002 10%		DI-2000		5R5D1	CCD-202	GP220	10TS-D20
C19	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C20	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S50
C21	1.0 200V		P288N-1.0		CUB2W1	GEM-21	GEM-21	2TM-M1
C22	.003 10%		DI-3000		IR5D3	CCD-302	JL-233	10TS-D30
C23	.002 10%		DI-2000		5R5D2	CCD-202	GP220	10TS-D20
C24	.003 10%		DI-3000		IR5D3	CCD-302	JL-233	10TS-D30
C25	.003 10%		DI-3000		IR5D3	CCD-302	JL-233	10TS-D30
C26	.002 10%		DI-2000		5R5D2	CCD-202	GP220	10TS-D20
C27	.003 10%		DI-3000		IR5D3	CCD-302	JL-233	10TS-D30
C28	100 10%		DI-100	DD-101	LI0T1	CCD-101	GP310	10TS-T10
C29	300 10%		1469-0003	TC Z-300	22R5T33	CM-19B-301K	MCE241	MS-33
C30	100 10%		DI-100	DD-101	LI0T1	CCD-101	GP310	10TS-T10
C31	25-280	#TC-2007						
C32	25-280	#TC-2007						
C33	80-480	#TC-2276						

Knight Part Number.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			KNIGHT PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Volume, 1	100K	TC-2493			† (Q J-1429R)	
B	Volume, 2 & Switch	100K					
R2A	Record Level, 1	100K	TC-2493-1			† (Q J-1430)	
B	Record Level, 2	100K					
R3	Hum Balance	500Ω	TP-1152	B-4, or (AB-4, AK-1)	A47-500-S, FKS 1/4	(BU11, 103, SK6, BU1, CF4, SS6, DC1)*	U2 or (UAI3L, SN-1000)
R4	Hum Balance	500Ω	TP-1152				

† "CONCENTRIKIT" Equivalent: K-15 Kit with Base Elements and Shafts: (Not available as a factory assembled unit)

B13-128, P17-024 (Panel)

B13-128, R1-103 (Rear)

76-1 (Switch)

‡ "CONCENTRIKIT" Equivalent: K-15 Kit with Base Elements and Shafts: (Not available as a factory assembled unit)

B13-128, P17-024 (Panel)

B13-128, R1-103 (Rear)

* "SNAPTROL"

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R5	1500Ω				R35	100K			
R6	10Ω				R36	100K			
R7	2.2meg				R37	10meg			
R8	220K 1W				R38	100K			
R9	100K				R39	6800Ω			
R10	100K				R40	100K			
R11	10meg				R41	150K			
R12	100K				R42	47K			
R13	6800Ω				R43	1meg			
R14	100K				R44	1500Ω			
R15	150K				R45	220K 1W			
R16	47K				R46	180K			
R17	1meg				R47	10meg			
R18	1500Ω				R48	100K			
R19	220K 1W				R49	100K			
R20	180K				R50	1500Ω			
R21	10meg				R51	330K			
R22	100K				R52	10K 2W			
R23	100K				R53	33K			
R24	1500Ω				R54	10K			
R25	330K				R55	20K 5%			
R26	10K 2W				R56	6200 5%			
R27	33K				R57	3300Ω 1W			
R28	10K				R58	100K			
R29	20K 5%				R59	100K			
R30	6200 5%				R60	2200Ω 1W			
R31	1500Ω				R61	1000Ω 1W			
R32	10Ω				R62	10K			
R33	2.2meg				R63	100Ω			
R34	220K 1W				R64	100Ω			

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		KNIGHT PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1	Equalization	TC-1947					
L2	Equalization	TC-1947					
L3	Bias Osc.	TC-2492					

MODEL KN-4075

AMP PARTS LIST AND DESCRIPTIONS (Continued)

MODEL KN-4075

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	SEC. 2	KNIGHT PART No.	MERIT PART No.	STANCOX PART No.	THORDARSON PART No.	
T1	117VAC @ .37A	580VAC @ .028A DC	6.3VAC @ 3.2A AC	TT-941				

TAPE HEADS

ITEM NO.	MEASURED			KNIGHT PART NO.	NORTONICS PART NO.	DESCRIPTION
	INDUCTANCE	BIAS/ERASE VOLTS (RMS)	BIAS FREQ.			
M1	415MH	40V	76KC	TH-584	#1000 QK-38*	4 Track Stereo Record * Mounting Hardware Kit
M2	480MH			TH-584	#1000 QK-38*	4 Track Stereo Play * Mounting Hardware Kit
M3	8MH	26V	76KC	TH-590	#1401 QK-18*	4 Track Stereo Erase * Mounting Hardware Kit

MISCELLANEOUS

ITEM No.	PART NAME	KNIGHT PART No.	NOTES
M4	Switch	TS-1997	Equalization (DPDT Slide Type)
M5	Switch	TS-1997	Play-Record (DPDT Slide Type)
M6	Switch	TS-3537	Channel Selector (3-Position Rotary Wafer Type)
M7	Switch		Sound-On-Sound - Normal (DPST Slide Type)
M8	Switch	TS-3490	Automatic Stop (Spring-Leaf, Micro Type)
M9	Meter	TM-488-1	Record Level
M10	Meter	TM-488-1	Record Level

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in 12 Colors
 Power Cord Use BELDEN No. 8524 (Stranded) Available in 12 Colors
 Power Cord (Interlock Type) Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)
 Low-Loss Shielded Lead (Interconnecting) Use BELDEN No. 8401 or 8421
 Phono Pick-up Arm Cable Use BELDEN No. 8430 (Two Conductor-Unshielded)
 8429 (Two Conductor-Shielded)
 8419 (Three Conductor-Shielded)

MODEL KN-4310

AMP PARTS LIST AND DESCRIPTIONS

MODEL KN-4310

TUBES

* AMPEREX *		GENERAL ELECTRIC		RCA		RAYTHEON		SYLVANIA	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE			
V1	Channel 1 Preamp.	ECC83/12AX7		V5	Channel 2 AF Amp. -Output	6AW8A			
V2	Channel 1 AF Amp. -Output	6AW8A		V6	Channel 2 Phase Inverter--Output	6AW8A			
V3	Channel 1 Phase Inverter--Output	6AW8A		V7	Bias Oscillator	ECC82/12AU7A			
V4	Channel 2 Preamp.	ECC83/12AX7		V8	Rectifier	6X4			

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	ORIGINAL Part or Type No.	RECTIFIERS		DIODES	NOTES
			RCA PART No.	SARKES TARZIAN PART No.		
X1						Channel 1 Record Meter Rect.
X2						Channel 2 Record Meter Rect.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	KNIGHT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	40	300	TC-2001	PR3-020	BBRT0185	QT4-3	WQ795	CDBQ-4422
B	40	300						
C	40	300						
C2	50	10	TC-1996	PTT45	NLW50-10	MTI-16	TT10X50	MLV50-10
C3	40	10		PTT44	NLW40-10	MTI-16	TT15X40	MLV40-12
C4	40	10		PTT45	NLW50-10	MTI-16	TT10X50	MLV50-10
C5	40	10	TC-1996	PTT44	NLW40-10	MTI-16	TT15X40	MLV40-12
C6	50	10		PTT45	NLW50-10	MTI-16	TT10X50	MLV50-10
C7	50	10		PTT45	NLW50-10	MTI-16	TT10X50	MLV50-10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA				
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENDO PART No.	MALLORY PART No.
C8	68 N1500 10%	(50) †	BPD-01	TCL-68	BYA10S1	* CCD-103	B-110
C9	.01		DI-820	DD-103	5R5T82	CCD-821	GP382
C10	820 10%		BPD-02	DD-203	BYB6S2	CCD-203	B-120
C11	.02		DI-300	LI0T3	BYB6S2	CCD-301	GP330
C12	300 10%		BPD-01	DD-103	BYA10S1	CCD-103	B-110
C13	.01		BPD-02	DD-203	BYB6S2	CCD-203	B-120
C14	.02		BPD-01	DD-103	BYA10S1	CCD-103	B-110
C15	.001		BPD-02	DD-203	BYB6S2	CCD-203	B-120
C16	.01		BPD-001	DD-102	BYA10D1	CCD-102	B-210
C17	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110
C18	300 10%		DI-300	LI0T3	BYA10S1	CCD-103	B-110
C19	.003 10%		DI-3000	LI0T3	BYA10S1	CCD-301	GP330
C20	68 N1500 10%	(50) †		IR5D3	CCD-302	JL233	10TS-D30
C21	.01		BPD-01	TCL-68	BYA10S1	* CCD-103	B-110
C22	820 10%		DI-820	DD-103	5R5T82	CCD-821	GP382
C23	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120
C24	300 10%		DI-300	LI0T3	BYB6S2	CCD-301	GP330
C25	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110
C26	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120
C27	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210
C28	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110
C29	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110
C30	300 10%		DI-300	LI0T3	BYA10S1	CCD-301	GP330
C31	.003 10%		DI-3000	LI0T3	BYA10S1	CCD-301	JL233
C32	80-480	#TC-2276		IR5D1	CCD-301	466	
C33	25-280	#TC-2007				464	
C34	25-280	#TC-2007				464	
C35	100 10%		DI-100	DD-101	LI0T1	CCD-101	GP310
C36	300 10%		1469-0003	TCZ-300	22R5T3	CM-19B-301K	MCE241
C37	100 10%		DI-100	DD-101	LI0T1	CCD-101	GP310

† Alternate Value.

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

Knight Part Number.

MODEL KN-4310

AMP PARTS LIST AND DESCRIPTIONS (Continued)

MODEL KN-4310

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			KNIGHT PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A B	Tone, 1 Volume, 1 & Power Switch (On-Off)	500K 500K	TC-1721	F1-41, R2-41, KR-1	P-500K-Z, CP-013, R-500K-Z, FR-102, SWE-12	† QJ-1510R	UE4182S, (FB55A, RU55A, OS750A, IS1187, US-41)
R2A B	Tone, 2 Volume, 2 & Power Switch	500K 500K	TC-1721	F1-41, R2-41, KR-1	P-500K-Z, CP-013, R-500K-Z, FR-102, SWE-12	† QJ-1510R	UE4182S, (FB55A, RU55A, OS750A, IS1187, US-41)

† "CONCENTRIKIT" Equivalent: K-15 Kit with Base Elements and Shafts;
(Not available as a factory assembled unit).

B13-133, P17-024 (Panel)

B13-133, R1-103 (Rear)

76-1 (Switch)

"SNAPTROL" Equivalent: BU4, CF25, CR20, SF3, SR3, GC

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R3	1meg				R31	68K			
R4	1500Ω				R32	10meg			
R5	220K 1W				R33	68K			
R6	100K				R34	100K			
R7	68K				R35	1000Ω			
R8	10meg				R36	150K			
R9	68K				R37	100K			
R10	100K				R38	100K			
R11	1000Ω				R39	470K			
R12	150K				R40	470K			
R13	100K				R41	220Ω			
R14	100K				R42	1000Ω			
R15	470K				R43	15K			
R16	470K				R44	22Ω			
R17	220Ω				R45	3.3Ω			
R18	1000Ω				R46	150K			
R19	15K				R47	30K			
R20	22Ω				R48	10K 5%			
R21	3.3Ω				R49	10K 5%			
R22	150K				R50	620Ω 5%			
R23	30K				R51	100K			
R24	10K				R52	100K			
R25	10K				R53	1500Ω 1W			
R26	620Ω 5%				R54	4700Ω 2W			
R27	1meg				R55	47K			
R28	1500Ω				R56	150Ω			
R29	220K 1W				R57	150Ω			
R30	100K								

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		KNIGHT PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1	Bias Osc.	TC-1937-1					
L2	Equalization	TC-1947					
L3	Equalization	TC-1947					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	KNIGHT PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V @ .49A (.86A)*	580VCT @.047A (.059A)†	6.3V @ 5.4A	TT-770					* With Motor † Record

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	KNIGHT PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	9000Ω CT	3-4Ω	TT-774					
T3	9000Ω CT	3-4Ω	TT-774-1					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	KNIGHT PART No.	QUAM PART No.	
SP1	6"	PM	3-4Ω	TS-2293	6A21	
SP2	6"	PM	3-4Ω	TS-2293	6A21	

TAPE HEADS

ITEM No.	MEASURED			KNIGHT PART No.	NORTONICS PART No.	DESCRIPTION
	INDUCTANCE	BIAS/ERASE VOLTS (RMS)	BIAS FREQ.			
M1	415MH	40V	76KC	TH-584	#1000 QK-38*	4 Track Stereo Record-Play * Mounting Hardware Kit
M2	8MH	26V	76KC	TH-590	#1401 QK-18*	4 Track Stereo Erase * Mounting Hardware Kit

MISCELLANEOUS

ITEM No.	PART NAME	KNIGHT PART No.	NOTES
M3	Switch	TS-3486	Channel 1, Play-Record (Rotary Wafer Type)
M4	Switch	TS-3486	Channel 2, Play-Record (Rotary Wafer Type)
M5	Switch	TS-1997	Speaker On-Off (DPDT Slide Type)
M6	Switch	TS-3490	Motor (Spring-Leaf, Micro Type)
M7	Meter	TM-488-1	Record Level
M8	Meter	TM-488-1	Record Level
	Microphone	TM-493	

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors
Power Cord Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Ft.
17109 (Plastic) or 17129 (Rubber) - 9 Ft.
Power Cord (Interlock Type) Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)
Low-Loss Shielded Lead (Interconnecting) Use BELDEN No. 8401 or 8421
Phono Pick-up Arm Cable Use BELDEN No. 8430 (Two Conductor-Unshielded)
8429 (Two Conductor-Shielded)
8419 (Three Conductor-Shielded)